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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,076	11/13/2003	Udo Custodis	02P19108	7295
24252	7590	10/05/2005	EXAMINER	
OSRAM SYLVANIA INC 100 ENDICOTT STREET DANVERS, MA 01923			QUARTERMAN, KEVIN J	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/706,076

Applicant(s)

CUSTODIS ET AL. 

Examiner

Kevin Quarterman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 November 2003.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.  
4a) Of the above claim(s) 10-12 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-9 is/are rejected.  
7) ☒ Claim(s) 1 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1103: 0305.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-9, drawn to a dielectric barrier discharge lamp, classified in class 313, subclass 486.
  - II. Claims 10-12, drawn to the use of a dielectric barrier discharge lamp, classified in class 362, subclass 614.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the dielectric barrier discharge can be used for backlighting a watch, calculator, or liquid crystal display, instead of viewing x-rays.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

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5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Robert Clark on 23 September 2005 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-9. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-12 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Specification***

8. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

9. The following title is suggested: --DIELECTRIC BARRIER DISCHARGE LAMP WITH PARTICULAR PHOSPHOR MIXTURE AND USE OF THIS LAMP FOR VIEWING X-RAYS--.

***Drawings***

10. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “discharge vessel” and the “phosphor mixture, which is applied to part of the wall of the discharge vessel” cited in claim 1 and “the dielectric layer” cited in claim 8 must ALL be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

11. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

12. Claim 1 is objected to because of the following informalities: Claim 1 cites "the phosphor components G, G B in the mixture..." in line 18. It appears to the Examiner that the first "G" should be replaced with the letter *R* to be consistent with the rest of the claim. Appropriate correction is required.

13. Claim 1 also cites "a phosphor mixture" in line 9 of the claim and "a phosphor mixture" in line 11 of the claim. It is unclear if there are two separate phosphor mixtures or simply one phosphor mixture. It appears to the Examiner that there is only one phosphor mixture and the term *the* or *said* should precede the second occurrence of "phosphor mixture".

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vollkommer (US 6,034,470) in view of Zachau (US 6,045,721).

17. Regarding independent claim 1, Figure 3a of Vollkommer shows a dielectric barrier discharge lamp having a discharge vessel (2), the wall of which enclose a discharge medium; a set of electrodes (3-6) for generating dielectric barrier discharges in the discharge medium, with a dielectric barrier action in respect of at least some of the set of electrodes, a phosphor mixture, which is applied to part of the wall of the discharge vessel, the phosphor mixture comprising the following phosphor components: R: (Y, Gd) BO<sub>3</sub> : Eu; G: LaPO<sub>4</sub> (Tb) or LaPO<sub>4</sub> : (Ce, Tb); B : BaMgAl<sub>10</sub>O<sub>17</sub> : Eu (col. 10, ln. 65-67; col. 11, ln. 1).

18. Vollkommer teaches the claimed limitations discussed earlier but fails to exemplify the phosphor components satisfying the following proportions by weight:  $0.05 \leq R \leq 0.15$ ;  $0.50 \leq G \leq 0.70$ ;  $0.20 \leq B \leq 0.40$  and  $R+G+B=1$ .

19. Zachau teaches that it is known in the art to provide discharge lamps with a phosphor mixture of the following components:

R: (Y, Gd) BO<sub>3</sub> : Eu; G: LaPO<sub>4</sub> (Tb) or LaPO<sub>4</sub> : (Ce, Tb); B: BaMgAl<sub>10</sub>O<sub>17</sub> : Eu, the phosphor components satisfying the following proportions by weight:  $0.05 \leq R \leq 0.15$ ;  $0.50 \leq G \leq 0.70$ ;  $0.20 \leq B \leq 0.40$  and  $R+G+B=1$  (col. 4, ln. 20-36). Zachau discloses that this phosphor mixture is provided for improving efficiency, stability, and maintenance of barium magnesium aluminate phosphors (col. 1, ln. 34-37).

20. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the discharge lamp of Vollkommer with the phosphor mixture taught by Zachau for widening the range possible applications for the discharge lamp.

21. Regarding claim 2, Zachau discloses the phosphor components satisfying the following proportions by weight:  $0.06 \leq R \leq 0.12$ ;  $0.58 \leq G \leq 0.66$ ;  $0.25 \leq B \leq 0.35$  and  $R+G+B=1$  (col. 4, ln. 20-36).

22. Regarding claim 3, Vollkommer discloses the discharge vessel containing xenon as discharge medium (col. 9, ln. 14-16).

23. Regarding claim 4, Vollkommer discloses the xenon filling pressure being in the range between 50 and 200mbar (col. 9, ln. 16-17).

24. Regarding claim 5, Vollkommer discloses the xenon filling pressure being in the range between 100 and 150mbar (col. 9, ln. 16-17).

25. Regarding claim 6, Figure 3a of Vollkommer shows the discharge vessel being flat and comprising a back plate (7) and a front plate (8) for the light to emerge, which is at least partly transparent to light (claim 1).

26. Regarding claim 7, Vollkommer discloses the discharge vessel being tubular (col. 12, ln. 1-8).

27. Regarding claim 8, Figure 6b of Vollkommer shows a dielectric layer (28) between at least part of the set of electrodes and the discharge medium.

28. Regarding claim 9, Figure 3a shows the set of electrodes comprising two or more elongate electrodes arranged on the wall of the discharge vessel.



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**Conclusion**

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Iguchi (US 6,635,992) discloses a board for plasma display with barrier ribs. Saitoh (US 6,899,826) discloses a fluorescent metal oxide material.

**Contact Information**


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571) 272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Quarterman  
Examiner  
Art Unit 2879

kq   
3 October 2005

  
Joseph Williams  
Primary Examiner  
Art Unit 2879